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AMSAT NEWS SERVICE
ANS-103

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-103 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 103.01
>From AMSAT HQ SILVER SPRING, MD.
DATE April 13, 2014
To All RADIO AMATEURS
BID: $ANS-103.01

March/April 2014 AMSAT Journal is Ready

The March/April 2014 AMSAT Journal is completed. It is on its way to the print shop and then to your mailbox. Here is what you will find in this issue:

+ AMSAT Announcements:
  Straight Key Night on OSCAR Results
  Steve Coy, K8UD Joins the AMSAT Board of Directors

+ Apogee View by Barry Baines, WD4ASW

+ G. Gould Smith, WA4SXM - Thank You for Your 25 Years of Accomplishment

+ 2014 AMSAT Board of Directors Election Notice by
  Alan Biddle, AMSAT Corporate Secretary, WA4SCA

+ Anthony "Tony" J. Monteiro, AA2TX Silent Key

+ Upcoming Amateur Radio Cubesats: The Flood Has Arrived
  by Bryan Klofas, KF6ZEO

+ W5PFG/P: Observations from a roving operator
  by Clayton Coleman, W5PFG

+ Fox-1 Telemetry Coding and Modulation Design
  by Phil Karn, KA9Q; Paul Williamson, KB5MU;
  Michelle Thompson, W5NYV

+ AMSAT Field Day Announcement

+ Meet Jerry Buxton, N0JY AMSAT Vice-President of Engineering

+ AMSAT Field Operations Group Updates Events
  by Patrick Stoddard, WD9EWK

+ AMSAT-NA Board of Directors Meeting Minutes
  by Alan Biddle, AMSAT Corporate Secretary, WA4SCA

Please send your operating information, articles, and photos to the AMSAT Journal mailbox: journal(a)amsat.org. Our editors are looking forward to working with you to get your items published!

[ANS thanks the AMSAT Journal Team for the above information]

NASA, SpaceX Officials Continue Preparations for 14 April Launch

NASA and SpaceX officials decided this morning to continue preparations for launch of a commercial resupply run to the International Space Station on Monday after a computer failed aboard the complex Friday, but managers will meet again Sunday morning to make a final decision on whether to proceed with the launch.
The failed computer, called a multiplexer-demultiplexer, or MDM, provides redundancy for the space station's mobile transporter, part of the outpost's robotics system that allows the Canadian-built robot arm to move along the lab's truss backbone.

The robot arm will be used to grapple the SpaceX Dragon spacecraft when it arrives at the space station. In a statement issued Saturday, NASA said the Canadian-built robot arm has other backup capabilities not affected by the failed computer.

NASA says the failed MDM is known as "EXT-2" and measures 10.5 x 14.9 x 16.4 inches and weighs 50.8 pounds. The computer failed during a routine health check of the device, according to NASA.

"Station program officials, flight controllers and teams of engineers are working to determine whether there is any risk to launching the SpaceX cargo craft Monday," the statement said. "They will evaluate whether the station has enough redundancy to permit the launch to proceed."

NASA says a separate team is planning a contingency spacewalk to replace the failed computer box, but no date for the spacewalk has been set.

[ANS thanks Spaceflightnow.com for the above information]

KickSat CubeSat to Deploy Smallest Earth-Orbiting Satellites

When the third SpaceX ISS resupply mission launches on April 14 from Cape Canaveral, it will carry the 3U KickSat CubeSat into orbit. NASA TV is scheduled to broadcast the launch live. If all goes according to plan, KickSat, in turn, will release 200 "Sprite" satellites -- each about the size of a small cracker -- into orbit. They will become the smallest Earth-orbiting satellites ever. Zac Manchester, KD2BHC -- a Cornell University PhD student in aerospace engineering -- is heading up the project, which was funded via Kickstarter.

"Our goal is to dramatically lower the cost of spaceflight, making it easy enough and affordable enough for anyone to explore space," the KickSat project website proclaims. "We can do this by shrinking the size and mass of the spacecraft, allowing many to be launched together."

The tiny Sprite spacecraft will be single-function, short-lifespan units operating on 437 MHz. Each is essentially a double-sided printed circuit board measuring 3.5 cm × 3.5 cm, incorporating a microcontroller or two, radio, and solar cells. Each can carry single-chip sensors, such as thermometers, magnetometers, gyroscopes, and accelerometers.

All Sprites operate on the same frequency -- 437.240 MHz -- and use Code Division Multiple Access (CDMA). Transmitters run 10 mW output of minimum shift keying (MSK) modulated binary data, with each data bit modulated as a 511 bit pseudo-random number (PRN) sequence (The ITU emission designator is 50K0G1D).

Andy Thomas, G0SFJ, points out that the Sprites will only operate when in sunlight. "Characteristically they have a 60 kHz bandwidth, and so narrowband receivers are not of any use to receive them," he explained in a tutorial that describes plans for a simple Earth station. "Therefore, the receiver of choice is a software defined receiver."

When KickSat reaches orbit, it will perform a "de-tumble" maneuver and establish communication with Cornell University's ground station. After everything has been checked out, the spacecraft will be put in a sun-pointing attitude and spun up to maintain that attitude. Then a command signal from the ground will trigger deployment, and the Sprites will be released as free-flying spacecraft. The Cornell ground station in Ithaca, New York, will monitor telemetry and sensor measurements from the individual Sprites, with assistance from several other Amateur Radio ground stations around the world.

Due to their low orbit, the Sprites will have short lifetimes, perhaps as long as six weeks in a best-case scenario but possibly a lot shorter, depending on atmospheric conditions.

KickSat is being planned as a technology demonstration mission for the Sprite spacecraft. It's being launched through NASA's Educational Launch of Nanosatellite (ELaNa) program. The KickSat project was founded in 2011 by members of the Space Systems Design Studio at Cornell University and is an outgrowth small spacecraft research that has been conducted there since 2007.

[ANS thanks ARRL for the above information]

AMSAT at the Dayton Hamvention - 2nd call for volunteers

The Dayton Hamvention is less than five weeks away!

It is time to be creating your shopping list and making your travel plans. If you can stay for more than a day and you want to stay with at the AMSAT hotel, contact Martha ASAP.

Last year, we had 41 people assist with the AMSAT booth at the Dayton. We've had a good response so far to our call for volunteers, but we could really use another 10-15 people. The interaction with AMSAT members, satellite operators, designers, and builders makes the whole experience a lot of fun. Meet or renew acquaintances, exchange operating tips, and find out what antennas, software and equipment other AMSAT members use. We currently expect all of the AMSAT senior officers and 6 of the 7 board members to be there too.

The 2014 Hamvention is May 16-18. Would you consider helping AMSAT at Dayton this year?

If you're an experienced operator, great! We can use you and your experience.

If you've never operated a satellite before, but want to learn more, that's OK. We can use your help too.

Whether you're available for only a couple of hours or if you can spend the entire weekend with us, your help would be greatly appreciated.

Please send an e-mail to Steve, n9ip at amsat dot org if you can help.
Thank you!

[ANS thanks Steve N9IP for the above information]

N8PK appears with students in YouTube video

Pat Kilroy, N8PK makes a brief appearance in a recently released video on YouTube. In it, he is working with a couple of his students working the AMSAT satellites as practice for future NASA engineers. They get a whole minute of the seven-minute limelight starting at about the 2:07 mark. And get a little chuckle at the tail end during our thank you's:
https://www.youtube.com/watch?v=5AbG1ZiVi5Y

That video was shot, at the same time the follwing was recorded, last summer and released last fall:
https://www.youtube.com/watch?v=_TQufCcxLkc

[ANS thanks Pat N8PK for the above information]

ISS HamTV moves to 2369 MHz

The Digital Amateur TV (DATV) station in the Columbus module of the International Space Station has changed frequency to 2369 MHz

Presently, Ham Video is transmitting permanently a "blank" image and no audio in configuration 5:
* ARISS antenna 43
* Frequency 2369 MHz
* Symbol rate 1.3 Ms/s

Reports on reception of blank transmissions are very welcome.
Reports can be filed via this webpage:
http://www.spaceflightsoftware.com/ARISS_FSTV/submit.php

Participants using the Tutioune receiving software can record as well as stream detailed parameters of the received signal. Please see:
http://www.vivadatv.org/

Reports are available at
http://www.vivadatv.org/viewtopic.php?f=66&t=294&p=785#p785

Thank you for your participation to the Ham Video testing campaign.

[ANS thanks Gaston Bertels, ON4WF for the above information]

FUNcube/AO-73 Transponder plans for the future

Following the 48 hour test last weekend, we have concluded that the battery temp does reduce slightly during full time transponder mode, but only by a degree C or so; it remains within specification. Hence we have decided in future to switch the satellite into 'forced eclipse mode', ie full time transponder and low power beacon at weekends. The aim is tosignificantly increase the availability of the transponder to radio amateurs. We will continue with this plan until further notice.

We plan to switch to full time transponder mode during the first suitable pass over the UK on Friday evenings, normally between 19:30 and 22:30 UTC. If for some reason this is not possible, then the switch will be done on the first suitable pass on Saturday, normally between 09:30 and 12:00 UTC. We plan to switch the full time transponder mode off during a suitable pass on Sunday evenings (UK time), which normally occur between 1930 and 22:30 UTC. Again, if this is not possible the switch off will be made on Monday mornings, approx. 09:30 to 12:00 UTC.

Do PLEASE NOTE that this schedule is totally reliant on the availability of command stations, who will do their very best to ensure it is maintained. We will not normally announce successful full time transponder mode on/off commands, but if it proves not possible to make one of them, then we will make a note here and on the FUNcube web site at
www.funcube.org.uk/news.

So please do enjoy the transponder, and use it any time you hear it on. We are always pleased to hear of your activity, so either leave a

comment on the website, or email g3wgm -at- amsat.org.

A recent QSO made by Paulo PV8DX can be seen at
http://www.youtube.com/watch?v=nMVetMKnCMQ
Thanks for the report, Paulo!

[ANS thanks Jim G3WGM for the above information]

Upcoming AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

Monday, 28 April 2014 - presentation at Franklin County Amateur Radio Club meeting in Greenfield MA by Barry Baines WD4ASW (AMSAT President)

Saturday, 3 May 2014 - Cochise Amateur Radio Association's Larry Warren Hamfest in Sierra Vista AZ (southeast of Tucson) - AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Friday through Sunday, 16-18 May 2014 - Dayton Hamvention
AMSAT will have their usualy booth set-up with a sales area, display of Engineering and Education activities, outside satellite demonstrations and will present anAMSAT Forum. Set-up is Thursday 15 May 2014.

Saturday, 7 June 2014 - Kachina Amateur Radio Club's White Mountain Hamfest in Show Low AZ (eastern Arizona, south of US-60/AZ-77/AZ-260) - AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Friday and Saturday, 13-14 June 2014 - Ham-Com in Plano TX (north of Dallas)

Thursday through Sunday, 17-20 July 2014 - ARRL Centennial Convention in Hartford CT. AMSAT will host a day-long Satellite Workshop on Thursday, and have a booth at the convention along with an AMSAT Forum and demonstrations throughout the convention.

Saturday and Sunday, 30-31 August 2014 - Shelby Hamfest in Shelby NC (west of Gastonia and Charlotte) - Barry Baines WD4ASW (AMSAT President) will host an AMSAT Forum on Saturday of this weekend

Friday through Sunday, 12-14 September 2014 - ARRL Southwestern Division Convention 2014 in San Diego CA (north of the city center, near Montgomery Field airport & I-805/CA-163 interchange) - AMSAT will have a booth at this convention, there will be on-air demonstrations using satellites throughout the convention, and a presentation on amateur satellites and AMSAT

AMSAT maintains and updated list of known upcoming events at
http://ww2.amsat.org/?page_id=218

[ANS thanks AMSAT-NA for the above announcement]

ARISS News

Due to Koichi Wakata's, KC5ZTA, increased work load beginning 2014-03-11, ARISS has had to move 3 schools back to our long term waiting list. We hope to get to them in the fall of 2014. There are also several other schools that are on the list for possible postponement to the fall.

>From 2014-05-12 to 2014-06-15, ARISS will be going into a period of no contacts as there will be no hams onboard.

[ANS thanks ARISS, and Charlie AJ9N for the above information]

Satellite Shorts From All Over

+ GNURadio Code and other stuff for setting up a Sprite ground station

  https://github.com/zacinaction/kicksat-groundstation

  [ANS thanks Zac Manchester KD2BHC for the above information]

+ KickSat Technical Summary

  http://www.bis-space.com/2013/03/09/9301/kicksat-technical-summary

  [ANS thanks Andrew Vaudin and The British Interplanetary Society for the above information]

+ Funcube's Jim Heck talks to Tx Factor about Transponder tests

  Project Manager Jim Heck G3WGM has given an exclusive audio interview to the TX Factor's Bob McCreadie, G0FGX which explains what the tests were all about.

  Will these tests lead to more time being made available to amateurs wanting to communicate via the satellite?

  Listen to the interview at www.txfactor.co.uk
  (click on the link under 'TX Factor Exclusive!')

  [ANS thanks Southgate ARN for the above information]

+ SatMagazine and MilsatMagazine now online

  April edition of SatMagazine is now online
  http://www.satmagazine.com/download.php

  March edition of MilsatMagazine in now online
  http://www.satmagazine.com/download.php

  Free Satnews Subscriptions

  Satnews allows you to choose which of our free services you wish

to receive. Our news coverage includes all aspects of the commercial and military satellite industry. We value your privacy and will not sell or share your email or other information with any other company.

http://www.satnews.com/register_new.php

[ANS thanks ANS Editors for the above information]

+ Make a #GlobalSelfie with NASA on Earth Day

NASA invites you -- and everyone else on the planet -- to take part in a worldwide celebration of Earth Day this year with the agency's #GlobalSelfie event.

The year 2014 is a big one for NASA Earth science. Five NASA missions designed to gather critical data about our home planet are launching to space this year. NASA is marking this big year for Earth science with a campaign called Earth Right Now, and as part of this campaign the agency is asking for your help this Earth Day, April 22.

While NASA satellites constantly look at Earth from space, on Earth Day we're asking you to step outside and take a picture of yourself wherever you are on Earth. Then post it to social media using the hashtag #GlobalSelfie.

See details at
http://www.nasa.gov/content/goddard/globalselfie/#.U0gmGfldWSo

[ANS thanks NASA for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
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